

## EAST Search History

Ref. #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	763	560/100.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:51
L2	746	560/106.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:51
L3	238	560/223.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:51
L4	613	562/553.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:52
L5	790	564/155.ccls.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:52
L6	3004	L1 OR L2 OR L3 OR L4 OR L5	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:52
L7	7	L6 AND CASPASE\$	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:53
L8	45	L6 AND APOPTOSIS	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:57
L9	790	562/450.CCLS.	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:57

## EAST Search History

L10	3727	L6 OR L9	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:57
L11	89	L10 AND APOPTOSIS	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:57
L12	20	L10 AND CASPASE\$	US-PGPUB; USPAT; FPRS; EPO; JPO; DERWENT	OR	ON	2007/08/07 17:57

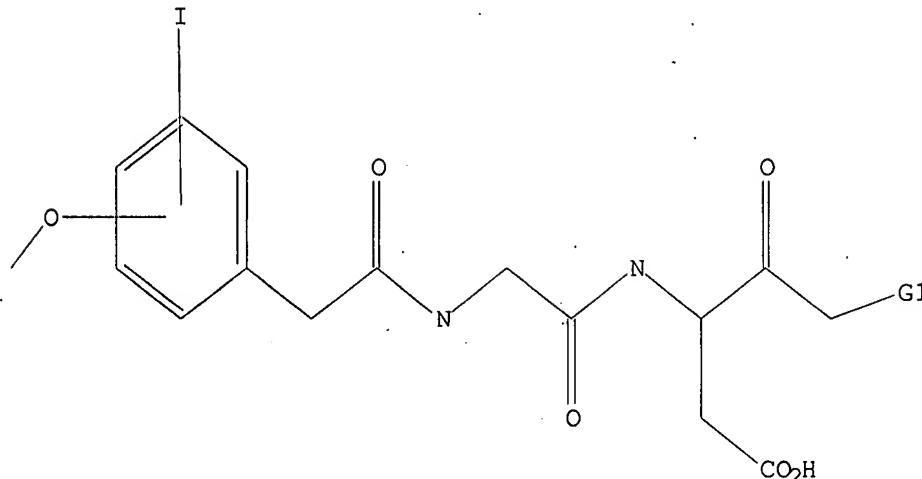
# STN Structure Search (Registry/Capplus)

10/542,684

08/07/2007

L1 STRUCTURE UPLOADED

=> d  
L1 HAS NO ANSWERS  
L1 STR



G1 X,O

Structure attributes must be viewed using STN Express query preparation.

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SAMPLE SEARCH INITIATED 15:59:08 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 0 TO ITERATE

100.0% PROCESSED 0 ITERATIONS 0 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\* ✓  
PROJECTED ITERATIONS: 0 TO 0  
PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1

=> s 11 full  
FULL SEARCH INITIATED 15:59:15 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED ✓ 50 TO ITERATE

100.0% PROCESSED ✓ 50 ITERATIONS  
SEARCH TIME: 00.00.01

19 ANSWERS

L3 19 SEA SSS FUL L1

=> fil capplus  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
FULL ESTIMATED COST ENTRY SESSION  
172.10 172.31

FILE 'CAPPLUS' ENTERED AT 15:59:19 ON 07 AUG 2007  
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FILE LAST UPDATED: 6 Aug 2007 (20070806/ED)

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=> s 13  
L4

3 L3

=> d ibib abs hitstr 1-3

L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:675705 CAPLUS

DOCUMENT NUMBER: 141:207524

TITLE: Preparation of peptidyl irreversible caspase-3 inhibitor as active site probes  
INVENTOR(S): Colucci, John; Giroux, Andre; Han, Yongxin; Methot, Nathalie; Nicholson, Donald W.; Roy, Sophie; Vailancourt, John Paul; Tawa, Paul

PATENT ASSIGNEE(S): Merck Frosst Canada &amp; Co., Can.

SOURCE: PCT Int. Appl., 70 pp.

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004069773	A1	20040819	WO 2004-CA152	20040205
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MW, MX, ND, NG, NI, RW, BN, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, NL, NO, PT, RO, SE, SI, SK, TR, BE, BJ, CF, CG, CI, GM, GA, GN, GR, GM, ML, MR, NE, SN, TG				
CA 2514441	A1	200311019	CA 2004-2514441	20040205
EP 1594819	A1	20031116	EP 2004-709291	20040205
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SR, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006519777	T	20060631	JP 2006-501408	20040205
US 2006069038	A1	20060330	US 2005-542684	20050719
			US 2003-445560P	P 20030207
PRIORITY APPLN. INFO.:				
			WO 2004-CA152	W 20040205

OTHER SOURCE(S): MARPAT 141:207524

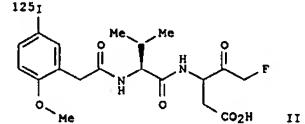
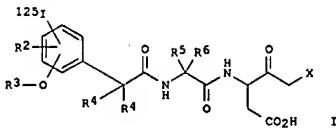
GI

2/7/03

Instant App

L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

(Continued)



AB The invention encompasses compds. I [X is halo or O-W-Z, where W is a bond, CH<sub>2</sub>, CO or COCH<sub>2</sub> and Z is H, alkyl, cycloalkyl, Ph etc.; R2 is H, halo, hydroxy, nitro, cyano, alkyl, etc., R3 is Ph or (un)substituted alkyl; R4 is H, halo, hydroxy, (un)substituted alkyl or alkoxyl; R5 is H, Ph, naphthyl, (un)substituted alkyl or cycloalkyl and R6 is H or R5 and R6 together form a ring] which are useful for determining whether a caspase has been activated in cells or in tissues of animal models of various pathologies. Furthermore, through competition based assays, these caspase active site probes can be used to calculate the percentage of occupancy of active caspases by other, unlabeled inhibitors. Thus, peptide II was prepared via coupling reactions of Me (5-iodo-2-methoxyphenyl)acetate, L-valine tert-Bu ester hydrochloride, and tert-Bu 3-amino-2,3,5-trideoxy-5-fluoropentenone, followed by tributylstannylation, iodination, and deprotection with TFA. II was assayed for inhibition of a subset of caspases and for detection of active caspases in protein exts.

IT 741292-99-BP 741292-99-9P 741293-00-5P  
741293-01-6P 741293-02-7P 741293-03-8P  
741293-04-9P 741293-05-0P 741293-06-1P  
741293-07-2P 741293-08-3P 741293-09-4P  
741293-10-7P 741293-11-8P 741293-12-9P  
741293-13-0P

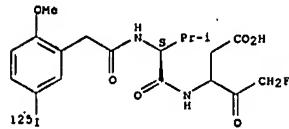
RL: DGN (Diagnostic use); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of peptidyl irreversible caspase-3 inhibitors as active site probes)

L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN (Continued)

RN 741292-98-8 CAPLUS

CN Pentanoic acid, 5-fluoro-3-[(2S)-2-[(5-(iodo-125I)-2-methoxyphenyl)acetyl]amino]-3-methyl-1-oxobutyl]amino)-4-oxo- (9CI) (CA INDEX NAME)

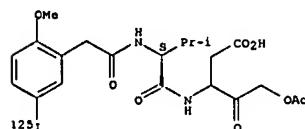
Absolute stereochemistry.



RN 741292-99-9 CAPLUS

CN Pentanoic acid, 5-(acetoxy)-3-[(2S)-2-[(5-(iodo-125I)-2-methoxyphenyl)acetyl]amino]-3-methyl-1-oxobutyl]amino)-4-oxo- (9CI) (CA INDEX NAME)

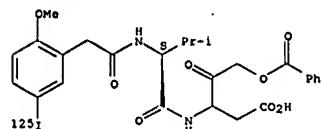
Absolute stereochemistry.



RN 741293-00-5 CAPLUS

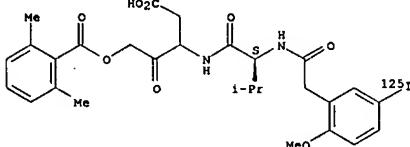
CN Pentanoic acid, 5-(benzoyloxy)-3-[(2S)-2-[(5-(iodo-125I)-2-methoxyphenyl)acetyl]amino]-3-methyl-1-oxobutyl]amino)-4-oxo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 741293-01-6 CAPLUS

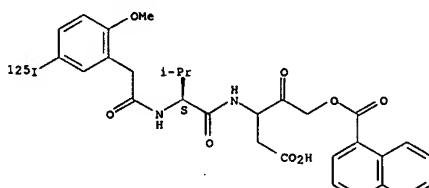
CN Benzoic acid, 2,6-dimethyl-, 4-carboxy-3-[(2S)-2-[(5-(iodo-125I)-2-methoxyphenyl)acetyl]amino]-3-methyl-1-oxobutyl]amino)-2-oxobutyl ester (9CI) (CA INDEX NAME)

L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN (Continued)  
Absolute stereochemistry.

RN 741293-02-7 CAPLUS

CN 1-Naphthalene carboxylic acid, 4-carboxy-3-[(2S)-2-[(5-(iodo-125I)-2-methoxyphenyl)acetyl]amino]-3-methyl-1-oxobutyl]amino)-2-oxobutyl ester (9CI) (CA INDEX NAME)

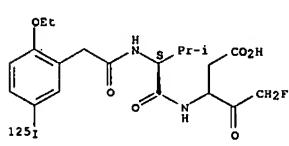
Absolute stereochemistry.



RN 741293-03-8 CAPLUS

CN Pentanoic acid, 5-[(2S)-2-[(2-ethoxy-5-(iodo-125I)phenyl)acetyl]amino]-3-methyl-1-oxobutyl]amino)-5-fluoro-4-oxo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

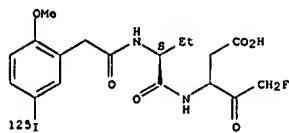


RN 741293-04-9 CAPLUS

CN Pentanoic acid, 5-fluoro-3-[(2S)-2-[(5-(iodo-125I)-2-methoxyphenyl)acetyl]amino]-1-oxobutyl]amino)-4-oxo- (9CI) (CA INDEX NAME)

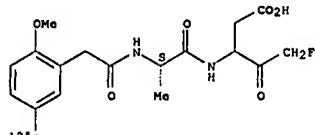
L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN (Continued)

Absolute stereochemistry.



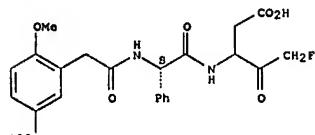
RN 741293-05-0 CAPLUS  
 CN Pentanoic acid, 5-fluoro-3-((2S)-2-((5-(iodo-125I)-2-methoxyphenyl)acetyl)amino)-1-oxopropylamino)-4-oxo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 741293-06-1 CAPLUS  
 CN Pentanoic acid, 5-fluoro-3-((2S)-2-((5-(iodo-125I)-2-methoxyphenyl)acetyl)amino)phenylacetyl)-4-oxo- (9CI) (CA INDEX NAME)

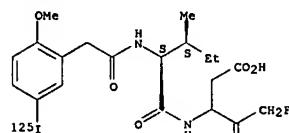
Absolute stereochemistry.



RN 741293-07-2 CAPLUS  
 CN Pentanoic acid, 5-fluoro-3-((2S,3S)-2-((5-(iodo-125I)-2-

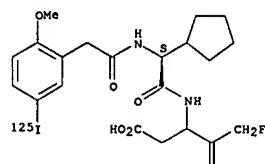
L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN (Continued)  
 (methoxyphenyl)acetyl)amino)-3-methyl-1-oxopropylamino)-4-oxo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 741293-08-3 CAPLUS  
 CN Pentanoic acid, 3-((2S)-cyclopentyl((5-(iodo-125I)-2-methoxyphenyl)acetyl)amino)-5-fluoro-4-oxo- (9CI) (CA INDEX NAME)

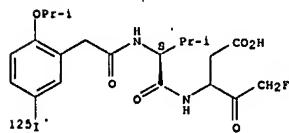
Absolute stereochemistry.



RN 741293-09-4 CAPLUS  
 CN Pentanoic acid, 5-fluoro-3-((2S)-2-((5-(iodo-125I)-2-(1-methylethoxy)phenyl)acetyl)amino)-3-methyl-1-oxobutylamino)-4-oxo- (9CI) (CA INDEX NAME)

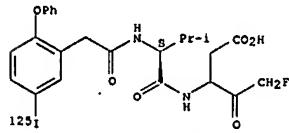
Absolute stereochemistry.

L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN (Continued)



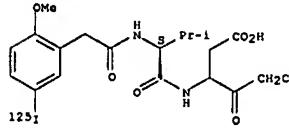
RN 741293-10-7 CAPLUS  
 CN Pentanoic acid, 5-fluoro-3-((2S)-2-((5-(iodo-125I)-2-phenoxyphenyl)acetyl)amino)-3-methyl-1-oxobutylamino)-4-oxo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 741293-11-8 CAPLUS  
 CN Pentanoic acid, 5-chloro-3-((2S)-2-((5-(iodo-125I)-2-methoxyphenyl)acetyl)amino)-3-methyl-1-oxobutylamino)-4-oxo- (9CI) (CA INDEX NAME)

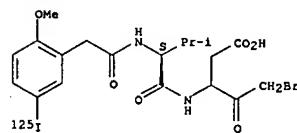
Absolute stereochemistry.



RN 741293-12-9 CAPLUS  
 CN Pentanoic acid, 5-bromo-3-((2S)-2-((5-(iodo-125I)-2-methoxyphenyl)acetyl)amino)-3-methyl-1-oxobutylamino)-4-oxo- (9CI) (CA INDEX NAME)

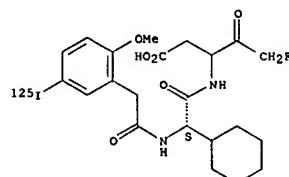
Absolute stereochemistry.

L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN (Continued)



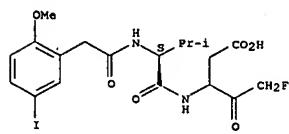
RN 741293-13-0 CAPLUS  
 CN Pentanoic acid, 3-((2S)-cyclohexyl((5-(iodo-125I)-2-methoxyphenyl)acetyl)amino)-5-fluoro-4-oxo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 741293-20-9  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of peptidyl irreversible caspase-3 inhibitors as active site probes)  
 RN 741293-20-9 CAPLUS  
 CN Pentanoic acid, 5-fluoro-3-((2S)-2-((5-(iodo-2-methoxyphenyl)acetyl)amino)-3-methyl-1-oxobutylamino)-4-oxo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

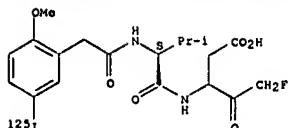
(Continued)

L4 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004-524634 CAPLUS  
 DOCUMENT NUMBER: 141:238703  
 TITLE: A Caspase Active Site Probe Reveals High Fractional Inhibition Needed to Block DNA Fragmentation  
 AUTHOR(S): Methot, Nathalie; Vaillancourt, John P.; Huang, JingQi; Colucci, John; Han, Yongxin; Menard, Stephane; Zamboni, Robert; Toulmond, Sylvie; Nicholson, Donald W.; Roy, Sophie  
 CORPORATE SOURCE: Merck Frosst Centre for Therapeutic Research, Merck Research Laboratories, Montreal, QC, H9H 3L1, Can.  
 SOURCE: Journal of Biological Chemistry (2004), 279(27), 27905-27914  
 CODEN: JBCHA3; ISSN: 0021-9258  
 PUBLISHER: American Society for Biochemistry and Molecular Biology  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Apoptotic markers consist of either caspase substrate cleavage products or phenotypic changes that manifest themselves as a consequence of caspase-mediated substrate cleavage. We have shown recently that pharmacological inhibitors of caspase activity prevent the appearance of two such apoptotic manifestations,  $\alpha$ -spectrin cleavage and DNA fragmentation, but that blockade of the latter required a significantly higher concentration of inhibitor. We investigated this phenomenon through the use of a novel radiolabeled caspase inhibitor, [125I]M808, which acts as a caspase active site probe. [125I]M808 bound to active caspases irreversibly and with high sensitivity in apoptotic cell extracts, in tissue extracts from several commonly used animal models of cellular injury, and in living cells. Moreover, [125I]M808 detected active caspases in septic mice when injected i.v. Using this caspase probe, an active site occupancy assay was developed and used to measure the fractional inhibition required to block apoptosis-induced DNA fragmentation. In thymocytes, occupancy of up to 40% of caspase active sites had no effect on DNA fragmentation, whereas inhibition of half of the DNA cleaving activity required between 65 and 75% of active site occupancy. These results suggest that a high and persistent fractional inhibition will be required for successful caspase inhibition-based therapies.  
 IT 741292-98-8; [125I]M 808  
 RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); PNU (Preparation, unclassified); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (active site probe [125I]M808 reveals high fractional inhibition of human caspase-3 is needed to block apoptosis-induced DNA fragmentation)  
 RN 741292-98-8 CAPLUS  
 CN Pentanoic acid, 5-fluoro-3-[(2S)-2-[(5-(iodo-125I)-2-methoxyphenyl)acetyl]amino]-3-methyl-1-oxobutyl]amino]-4-oxo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

L4 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

(Continued)



REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2002-185062 CAPLUS  
 DOCUMENT NUMBER: 136:232548  
 TITLE: Preparation of  $\gamma$ -keto acid dipeptides as inhibitors of caspase-3  
 INVENTOR(S): Han, Yongxin; Giroux, Andre; Grimm, Erich L.; Aspoltis, Renee; Black, Cameron  
 PATENT ASSIGNEE(S): Merck Frosst Canada & Co., Can.  
 SOURCE: PCT Int. Appl., 99 pp.  
 CODEN: PIXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

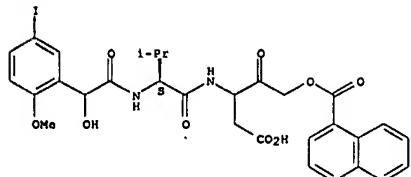
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002020465	A2	20020314	WO 2001-CA1272	20010906
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TR, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BT, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2421172	A1	20020314	CA 2001-2421172	20010906
AU 2001093533	A5	20020322	AU 2001-93533	20010906
EP 1317414	A2	20030611	EP 2001-973867	20010906
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 200452080	T	20040715	JP 2002-525088	20010906
US 2002165230	A1	20021107	US 2001-948244	20010907
US 6525025	B2	20030225	US 2000-231019P	20000906
PRIORITY APPLN. INFO.:				WO 2001-CA1272 W 20010906

OTHER SOURCE(S): MARPAT 136:232548  
 AB  $\gamma$ -Keto acid dipeptides RCR12CONHCR2R3CONHCH(CH<sub>2</sub>CO<sub>2</sub>H)COCH<sub>2</sub>-O-W-Z (W = a bond, CH<sub>2</sub>, CO or COCH<sub>2</sub>; Z = H, (un)substituted alkyl, cycloalkyl or a benzofused analog, Ph, naphthyl or a 5- to 10-membered mono- or bicyclic, aromatic or non-aromatic ring, or a benzofused analog, containing 1-3 heteroatoms selected from O, S and N; R = (un)substituted alkoxyphenyl; R1 = H, halo, OH, alkyl or alkoxy optionally substituted by oxo or 1-3 halo groups; R2 = H, Ph, naphthyl, (un)substituted (cyclo)alkyl; R3 = H or R2R3 represent a 4-7 membered ring optionally containing one heteroatom selected from O, S and N) were prepared as inhibitors of caspase-3. Thus, (3S)-5-[(2-chloro-6-fluorobenzyl)oxy]-3-[(2S)-2-[(2,5-dimethoxyphenyl)acetyl]amino]-3-methylbutanoyl-4-exopentenoic acid was prepared by the solid phase method by loading (S)-FmocNHCH(CH<sub>2</sub>CO<sub>2</sub>Bu-t)COCH<sub>2</sub>Br (Fmoc = fluorenylmethoxycarbonyl) (preparation described) onto a solid support using the technol, described by Webb et al. (1992).  
 IT 403499-45-6P 403499-46-7P  
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU

Same inventors

L4 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN (Continued)  
 (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
 (Uses);  
 (prepns. of  $\gamma$ -keto acid dipeptides as inhibitors of caspase-3)  
 RN 404399-45-6 CAPLUS  
 CN 1-Naphthaleneacarboxylic acid, 4-carboxy-3-[(12S)-2-[(hydroxy5-iodo-2-methoxyphenyl)acetyl]amino)-3-methyl-1-oxobutyl]amino)-2-oxobutyl ester  
 (9CI) (CA INDEX NAME)

### Absolute stereochemistry.



RN 403499-46-7 CAPLUS  
 CN Pentanoic acid,  
 3-((2S)-2-[(hydroxy-5-iodo-2-methoxyphenyl)acetyl]amino)-  
 3-methyl-1-oxobutyl]amino)-5-(1-naphthalenylxylo)-4-oxo- (9CI) (CA INDEX  
 NAME)

### Absolute stereochemistry.

